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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SHENG, TOM V

ART UNIT

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2629

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/019,016	Applicant(s) BOCK ET AL.	
	Examiner Tom V. Sheng	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-21, 25-35 and 39-51 is/are rejected.
- 7) ☒ Claim(s) 22-24, 36-38 and 52 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 18 is objected to because of the following informalities:

Line 6; append --; -- after "information"; and

Line 7, replace "in" with --for generating--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 18-21, 25-35 and 39-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flack et al. (US 6,288,704 B1), hereinafter Flack, in view of Lee (US 6,392,632 B1).

As for claim 18 and associated claims 48 and 49, Flack teaches an input device for computer systems (hand-held computer 20; fig. 3), comprising:

a recording unit (video camera 60) to serially record image information (capturing an user's unique feature set sampled at a rate; column 5, lines 45-49; column 5, line 65 through column 6, line 2);

an image evaluation unit (motion processor 115; fig. 4) to

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evaluate the recorded image information (in operation 200 a reference image is captured; in operation 210 the location of a reference target is identified <such as the user's head>; in operation 220 the relative position of the reference target with respect to the display is generated <inherently based on another image capture>; column 6, lines 37-61) and

determine control information (updated position of the display device relative to the navigation target, which derived from new motion and position estimate of the display device) from a relative displacement of the serially recorded image information (operation 230; based on the changes in the relative position of the navigation reference target; column 6, line 61 through column 7, line 2),

the image evaluation unit generating motion vectors (the updated position of the display device relative to the navigation target is equivalent to a motion vector relative to a frame of reference including the reference navigation target; column 6, lines 18-20),

the control information being a main motion vector of the serially recorded image information (as analyzed above, with respect to each image sampled);

a data processing unit (processor 110) to process the control information for generating selection information (based on the updated position, in operation 240 the displayed portion is updated in a manner related to the tracked movement; column 7, lines 2-4); and

a display unit (display device 118) to display the selection information (display portion is updated, as analyzed above.).

However, Flack does not teach that the motion vectors are generated using an image compression device.

Lee teaches an image-capturing device having a first and second operation mode. Specifically, in the first mode, the image signals received are processed and used to control cursor movement on a display (See Abstract). Moreover, in the calculation of the motion vector between a current frame and a previous frame, a compression scheme is used (column 7, lines 30-44).

One of ordinary skill in the art would recognize that similarly a compression scheme could be utilized by Flack's motion processor in the generation of motion vectors. Therefore, it would have been obvious to incorporate a compression scheme in Flack's operations to be used by the motion processor in the generation of motion vectors, because of direct applicability and saving in data transmission required.

As for claim 19, Flack teaches the traverse of a map data or a zoom using motion of the hand held computer 20. Thus, the selection information here corresponds to the entire display area since each update involves the entire display area.

As for claims 20-21 and 34-35, Flack teaches exploring a map in the x-axis, y-axis, or both (column 7, lines 5-11; 20-27). Thus, Flack at least teaches a parallel relative displacement of the image information in the x direction and in the y direction.

As for claims 25 and 39, besides map navigation as analyzed above, Flack also teaches that the hand held computer can communicate with a desktop computer or even through the internet for greater capacity (column 7, lines 51 through column 8, line 16). Thus, Flack teaches a mobile multimedia communication terminal.

As for claims 26 and 40, Flack teaches that as the hand held computer is moved along the positive x-axis, the map is displayed in an eastward direction. Thus, Flack teaches that the recording unit records in the display direction of the display unit.

As for claims 27 and 41, Flack does not teach that the recording unit records in the opposite direction to the display direction of the display unit. On the other hand, one of ordinary skill in the art would recognize that the direction of the recording unit and the direction of the display unit have no fixed relationship and only depend on the application. Therefore, it would have been obvious to have the two directions opposite to each other in certain application(s).

As for claims 28 and 42, since application determines directions of the recording unit and the display, it would be convenient to provide an additional recording unit that record in the opposite direction to the display direction of the display unit.

As for claims 29 and 43, Flack does not specifically teach the sensor type used in his video camera 60. On the other hand, Lee teaches that his light sensor 34 (fig. 3) can be either CCD or CMOS device (column 4, lines 4-12). One of ordinary skill in the art would recognize that Lee's sensor is common and suitably useable as the sensor in the video camera 60. Therefore, it would have been obvious to incorporate either CCD or CMOS type light sensor in the video camera because of the suitability and commonality.

As for claims 30 and 44, Flack teaches a control button 61 (fig. 3) that may be operable to activate or deactivate the motion-controlled function above (column 6, lines 27-32).

As for claims 31 and 45, Flack teaches using the hand held computer as a computer mouse (fig. 13; column 7, lines 39-51). Inherently, the video camera 60 must have a macro imaging ability when used as a desktop mouse.

As for claims 32 and 46, it is clear from fig. 13 that one of the buttons show with hand held computer 20 is used as a pressure sensor for confirming the displayed selection information.

As for claims 33 and 47, Flack teaches the hand held computer as a mobile videophone (fig. 14; column 9, lines 36-49).

As for claim 50, Flack teaches using the hand held computer as a computer mouse (fig. 13; column 7, lines 39-51). Inherently, a cursor or the like would be moved based on the motion vector which in turn depends on relative movement of the display/hand held computer.

As for claim 51, scrolling is a well-known interface method using a cursor.

Allowable Subject Matter

4. Claims 22-24, 36-38 and 52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

None of the prior arts of record teaches the limitation "wherein the control information has a z component, wherein the image evaluation unit takes into account a

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concentric relative displacement of the image information in the x and y directions” of claims 22 and 36 and “wherein the data processing unit zooms into and out of the information displayed based on the motion vector such that if the second image position is further from the recorder than the first image position, then the data processing unit zooms out of the information displayed, and if the second image position is closer to the recorder than the first image position, then the data processing unit zooms into the information displayed” of claim 52.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V. Sheng whose telephone number is (571) 272-7684. The examiner can normally be reached on 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tom Sheng

AMR A. AWAD
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read "Amr A. Awad", written in a cursive style.